telecommunications services. The average projected capital structure consisted of 58% common equity and 42% debt. Witness Hinton testified that such a capital structure was reasonable since this level of debt leverage would allow for an "A" to "AA"-bond rating according to current financial ratio benchmarks published by S&P. Witness Hinton determined the forward-looking cost of debt by calculating a weighted average of the yield-to-maturity for 20 to 40-year debt recently issued by companies in this comparable risk group. This yield data was taken from the S&P Bond Guide and averaged for the last three months as of November 1997 and excluded the yields for noncallable bonds. The cost of debt determined in this manner equaled 7.38%. To determine the cost of equity, witness Hinton applied the annual DCF model to his comparable group of ten telephone companies and another group of companies outside the regulated utility industry that exhibit risk measures similar to the comparable group of ten telecommunications companies. Witness Hinton concluded that the cost of equity from his DCF analysis was 11.8% which was the midpoint of his 11.3% to 12.3% cost of equity range. He also used the CAPM to check the results of his DCF study and concluded that his CAPM analysis indicated that the 11.8% cost of equity determined by his DCF analysis was within reason.

Summary

The following table sets forth the capital structure, cost of debt, cost of equity, and the overall cost of capital from the FCC's Order in Docket No. 89-624 and those percentages recommended or included in the FLEC studies by the various parties to this proceeding.

	FCC	BellSouth	Carolina/ Central	GTE	AT&T/MCI	Public Staff
Capital Structure %						
Equity	55.8	60	62.9	78.8	60	58
Debt	44.2	40	37.1	22.2	40	42
TOTAL	100	100	100	100	100	100
Cost of Debt %	8.8	8.0	6.4	7.6	7.06%-BellSouth 7.19%-CT&T/Central 7.22%-GTE	7.38
Cost of Equity %	12.5-13.5	13.4	14.1	14.7	11.02%-BellSouth 11.1%-CT&T/Central 11.19%-GTE	11.8
Overall Cost of Capital	11.25	11.25	11.25	13.13	9.43%-BellSouth 9.53%-CT&T/Central 9.60%-GTE	9.94

CONCLUSIONS

The Commission concludes that the FCC's prescribed interstate overall rate of return of 11.25% is not appropriate for purposes of this proceeding. The FCC adopted this overall rate of return in 1990 in Docket No. 89-624. Evidence in the record shows that current interest rates, current inflation rates, and the national average of the allowed returns on equity for telephone companies for the first nine months of 1997 are less than in 1990. Further, this proceeding involves the determination of forward-looking economic costs in the provision of universal service while the FCC's 11.25% overall rate of return was based, in part, on an embedded cost of debt. In addition, the FCC's overall rate of return was specifically based upon its findings that the embedded cost of debt equaled 8.8%, the capital structure ratios consisted of 55.8% equity and 44.2% debt, and the range of reasonable estimates of the LEC interstate access cost of equity was 12.5% to 13.5%. In contrast, although BellSouth and Carolina/Central also employed an overall cost of capital of 11.25%, each of these parties used a cost of debt, capital structure ratios, and a cost of equity which differs from those used as the very basis for the FCC's overall rate of return of 11.25%. While not pointed out by the parties to this proceeding, the

Commission notes that the 11.25% overall rate of return proposed by both BellSouth and Carolina/Central would generate a higher cost for universal service than the 11.25% overall rate of return of the FCC. This higher cost would occur because BellSouth and Carolina/Central each used a higher equity ratio and a higher cost of equity than did the FCC. Thus, more income tax dollars would be required.

Having concluded that the FCC's prescribed overall rate of return is inappropriate for the reasons stated above, the Commission must turn to the evidence in the record in this proceeding to establish the State's prescribed rate of return for intrastate services. After careful consideration of the entire record, the Commission concludes that the capital structure, cost of debt, and cost of equity recommended by the Public Staff should be adopted for purposes of this proceeding.

As shown in the previous table, the Public Staff's recommended capital structure consists of 58% equity and 42% debt. This capital structure was determined by averaging the equity ratio projected by Value Line for ten telecommunications companies. In comparison, BellSouth uses a capital structure containing 60% equity, although BellSouth witness Billingsley testified that BellSouth Telecommunication's actual capital structure at December 31, 1997, contains 57.14% common equity. AT&T's recommended capital structure also contains 60% equity and was based on the average of the book value and market value weights of debt and equity for a group of companies. Carolina/Central used a capital structure which contains 62.9% equity. GTE's recommended capital structure contains 77.8% equity and was based on the market value of equity and the book value of debt of the S&P Industrials.

The cost of debt recommended by the Public Staff equals 7.38%. This debt cost was determined by averaging the yield-to-maturity for recently issued 20 to 40-year long-term debt for ten telecommunications companies as described in more detail above. In comparison, BellSouth used a debt cost of 8.0%, although BellSouth witness Billingsley stated that BellSouth's embedded cost of debt equals 6.36% and also testified that he believed that BellSouth Telecommunications' forward-looking cost of debt is 6.90%. Carolina/Central used a cost of debt of 6.4%. AT&T recommended a separate cost of debt for each ILEC based on the weighted-average cost of the yield-to-maturity of each ILEC's major debt issues. GTE's recommended debt cost of 7.64% was based on the average yield of newly issued "A"-rated Industrial Bonds.

The cost of equity recommended by the Public Staff of 11.8%, which was the center of the range of 11.3% to 12.3%, was based on a DCF for ten telecommunications companies. The return on equity used by BellSouth and Carolina/Central was essentially a "plugged," or mathematically derived, figure given an overall rate of return of 11.25%, the capital structure and debt cost rates used by these companies. As reflected in the preceding table, AT&T recommended a separate cost of equity for each ILEC: 11.02% for

BellSouth, 11.10% for Carolina/Central, and 11.19% for GTE. Finally, GTE recommended a 14.7% return on equity based on a DCF for the S&P Industrials.

The Commission believes that the evidence contained in the testimony of the Public Staff with respect to the rate of return issue is the most credible evidence in the record in this proceeding. Therefore, the prescribed cost of capital for intrastate services in North Carolina which is reasonable and appropriate for use in determining the forward-looking economic costs associated with providing universal service is 9.94%, based on the following capital structure and cost rates:

Component	Ratio	Cost Rate	Weighted Cost Rate
Long-term debt	42%	7.38%	3.10%
Common equity	58%	11.80%	6.84%
Total	100%		9.94%

PART NO. 4: OTHER ISSUES

4(a): FCC CRITERIA COMPLIANCE

POSITIONS OF PARTIES

BELLSOUTH: BellSouth contended that BCPM 3.1 meets the FCC's ten criteria.

CAROLINA/CENTRAL: The BCPM model complies with the FCC's ten criteria.

GTE: GTE advocated BCPM on an interim basis, populated with company-specific inputs.

AT&T: AT&T stated that the HM 5.0 meets the FCC's ten criteria.

MCI: MCI stated that the HM 5.0 meets the FCC's ten criteria.

NCCTA: Both HM 5.0 and BCPM 3.1 serve the purpose for which they are intended and meet the FCC requirements; although the NCCTA expressed dubiety concerning the inputs.

ATTORNEY GENERAL: The Attorney General suggested that the differences between BCPM 3.1 and HM 5.0 appear de minimis and either would be acceptable provided the models are cost appropriate.

PUBLIC STAFF: The Public Staff stated that the FLEC studies using BCPM 3.1 with inputs reflecting the reasonable forward-looking costs of Carolina/Central, BellSouth, and GTE are appropriate and comply with all ten of the FCC criteria. The only likely exception is the requirement in the first criterion that average loop length reflect the ILEC's actual average loop length because it cannot be reasonably determined for all classes of service.

DISCUSSION

The Commission believes that there is merit to the proposition that HM 5.0 and BCPM 3.1 are converging and that they are becoming less distinct. Both models appear to meet the FCC's criteria. Therefore, the Commission has selected the model which, on the whole, it believes to be more appropriate. In that regard, the Commission concluded in Part No. 2(a) of this Order that BCPM 3.1 is more reasonable, more accessible, and more appropriate than the Hatfield Model for determining the forward-looking economic cost of providing universal service in North Carolina. Further, the Commission believes that the revised cost studies, as required by this Order, will comply with and meet all ten of the criteria prescribed by the FCC for state-conducted FLEC studies.

CONCLUSIONS

The Commission concludes that the BCPM 3.1 model, conducted in accordance with the provisions of this Order, meets all ten of the USO criteria prescribed by the FCC for state-conducted FLEC studies.

4(b): REVISED STUDIES AND COMPLIANCE FILINGS

The FCC has given detailed instructions to the states regarding the format to be used in submitting their FLEC studies. These instructions, which are available on the World Wide Web at http://www.fcc.gov/ccb/universal_service/welcome.html, include the submission of a text document and two spreadsheets.

In order to complete the task of adopting North Carolina studies and submitting them to the FCC, the Commission hereby directs Carolina/Central, BellSouth, and GTE to rerun their cost studies with company-specific inputs as modified by this Order. The studies should be rerun using Carolina/Central's version of the BCPM 3.1, which is the only version before the Commission that is capable of producing results below the wire center level.

Carolina/Central, BellSouth, and GTE shall file the revised studies in electronic form and in accordance with the text document format and spreadsheet requirements for inputs and outputs set forth in the FCC's Public Notice DA98-217, issued February 27, 1998. Portions of the text document such as Section A.7, supporting information, and Section B, demonstration that the studies fulfill the FCC criteria for state cost studies, may be filed jointly. The revised cost studies, text, and spreadsheets will be subject to review and comment by the Public Staff and any further revisions required by the Commission prior to their submission to the FCC.

4(c): SERVICES INCLUDED IN THE DEFINITION OF UNIVERSAL SERVICE

POSITIONS OF PARTIES

BELLSOUTH: BellSouth stated in its Proposed Order and Brief that the FCC specified a list of basic services as the set of supported services under the Act.

CAROLINA/CENTRAL: Carolina/Central advocated in their Proposed Order and Brief that the Commission should adopt the FCC's list of services to be included in the definition of "universal service".

GTE: GTE stated in its issues matrix that the FCC's defined services should be used, except that the cost of white pages and telephone relay services should also be included.

AT&T: AT&T stated in its Proposed Order that the Commission should find that the FCC's defined services should be included in the calculation of the cost of universal service.

MCI: MCI did not address this issue with specificity in its Proposed Order.

NCCTA: The NCCTA did not address this issue with specificity in its Brief.

ATTORNEY GENERAL: The Attorney General did not address this issue with specificity in his Brief.

PUBLIC STAFF: The Public Staff did not address this issue with specificity in its Proposed Order.

DISCUSSION

The issue of the services to be included in the definition of universal service will be addressed by the parties and the Commission in Docket No. P-100, Sub 133g. Direct testimony already filed in Docket No. P-100, Sub 133g, indicates that the parties have addressed that issue in the context of that docket. Carolina/Central included a discussion in their Proposed Order in this instant docket that recommends the Commission find that the services designated by the FCC in Paragraph 56 of the USO be used in the definition of universal service. Carolina/Central also recommended in their Proposed Order that the

Commission find that the services defined by the FCC be supported by the North Carolina Universal Service Fund.

CONCLUSIONS

The Commission concludes that the issue of defining services to be included in the definition of universal service will be addressed and decided in the context of Docket No. P-100, Sub 133g.

4(d): COST MODEL FOR INTRASTATE UNIVERSAL SERVICE FUND

POSITIONS OF PARTIES

BELLSOUTH: BellSouth stated in its Proposed Order and Brief that using the same cost model and cost methodology to calculate both the federal and state fund will simplify the state fund calculation.

CAROLINA/CENTRAL: Carolina/Central stated in their Proposed Order and Brief that using the same cost model and cost methodology to calculate both the federal and state fund will simplify the state fund calculation.

GTE: GTE did not address this issue with specificity in its Proposed Order or Brief.

AT&T: AT&T did not address this issue with specificity in its Proposed Order or Brief.

MCI: MCI did not address this issue with specificity in its Proposed Order.

NCCTA: The NCCTA stated that the FCC's USO specifies that if a state cost study is used to determine federal universal service support levels, that state's cost study "must be the same cost study that is used by the state to determine intrastate universal service support levels." The NCCTA also stated that the FCC further reiterated its statements in Public Notice DA 97-2383. The NCCTA stated that the decision in this proceeding will also determine which model must be used for purposes of the state universal service subsidy calculation.

ATTORNEY GENERAL: The Attorney General did not address this issue with specificity in his Brief.

PUBLIC STAFF: The Public Staff stated in its Proposed Order that the FCC asserted that a state-conducted cost study must be the same study that is used to determine intrastate universal service support levels pursuant to Section 254(f) of the Act.

DISCUSSION

Issues related to the need for and establishment of an intrastate universal service fund will be addressed by the parties and the Commission in Docket No. P-100, Sub 133g. Carolina/Central included a discussion in their Proposed Order in this instant docket that recommends the Commission state in its Order in this proceeding that using the same cost model and cost methodology to calculate both the federal and state fund will simplify the state fund calculation. Paragraph 251 of the FCC's USO states:

> "In Order for the Commission to accept a state cost study submitted to us for the purposes of calculating federal universal service support, that study **must be the same cost study that is used by the state to determine intrastate universal service support levels** pursuant to 254(e)." [emphasis added]

Additionally, the FCC's Public Notice, DA 97-2383 states, in part:

> "A state cost study that is submitted to determine federal support levels **will not be accepted if a state changes the way that its cost study computes forward-looking cost for its state universal service program**. For example, a state could not alter the study's cost calculations to compute intrastate support, such as by changing the area over which support is calculated, and still expect the study to be used to determine federal support levels." [emphasis added]

The Commission notes that the issues related to the need for and establishment of an intrastate universal service fund will be decided by the Commission in Docket No. P-100, Sub 133g. However, the Commission also notes that the FCC has dictated that a state must use the same cost study to calculate both the federal universal service support and the cost for a state's universal service program.

CONCLUSIONS

The Commission concludes that using the same cost model and cost methodology to calculate both the federal and state fund will simplify the state fund calculation, if such a fund is found necessary.

4(e): MODEL FOR PRICING UNBUNDLED NETWORK ELEMENTS (UNEs)

POSITIONS OF PARTIES

BELLSOUTH: BellSouth did not address this issue with specificity in its Proposed Order or Brief.

CAROLINA/CENTRAL: Carolina/Central did not address this issue with specificity in their Proposed Order or Brief.

GTE: GTE did not address this issue with specificity in its Proposed Order or Brief.

AT&T: The Commission should use the same cost studies for pricing UNEs and for determining universal service support subsidies. The HM is the only model that can be used for both purposes.

MCI: The cost proxy model selected by the Commission should consistently be used for pricing UNEs and for determining universal service support. MCI believes that the HM 5.0 is the only model that consistently calculates both.

NCCTA: The NCCTA stated that the costing methodology selected in this proceeding should be consistent with the methodology selected in the UNE proceeding in order to eliminate market dislocations and reduce arbitrage opportunities.

ATTORNEY GENERAL: The Attorney General did not address this issue with specificity in his Brief.

PUBLIC STAFF: The Public Staff did not address this issue with specificity in its Proposed Order.

DISCUSSION

AT&T stated that the standard for both pricing of UNEs and determining levels of universal service support is the same: the forward-looking, economic cost of the facilities. AT&T and MCI believe that there is no reason that the same methodology should not apply to both. They recommended approval of the HM for use in both the pricing of UNEs and in determining levels of universal service support. However, on cross-examination, AT&T/MCI witness Gillan testified that in terms of determining what the total cost of universal service is for retail purposes, there would be retail costs associated with such determination that might not necessarily be a part of the UNE cost, such as billing and collection expenses.

By Order issued August 12, 1997, in Docket No. P-100, Sub 133b, the Commission stated that it ". . .believes that it is best at this time to limit the issues in this proceeding to those relevant in deciding on an appropriate FLEC study to be used in determining the cost of universal service in North Carolina." Consistent with that Order and considering the issue raised concerning retail costs, the Commission believes that it would be inappropriate to decide this matter at this time.

CONCLUSIONS

The Commission concludes that it is appropriate to decide the matter of the appropriate cost model for UNE pricing, in Docket No. P-100, Sub 133d, now pending.

IT IS, THEREFORE, ORDERED as follows:

1. That the BCPM 3.1 is the appropriate model to use in determining the forward-looking economic cost of providing universal service for Carolina/Central, BellSouth, and GTE in North Carolina.

2. That Carolina/Central, BellSouth, and GTE shall file revised cost studies, text, and spreadsheets, conducted in accordance with the input provisions and requirements of this Order, no later than Thursday, April 30, 1998.

3. That the Public Staff shall file comments on the revised cost studies, text document, and spreadsheets filed by Carolina/Central, BellSouth, and GTE no later than Friday, May 8, 1998.

ISSUED BY ORDER OF THE COMMISSION.

This the 26th day of April, 1998.

NORTH CAROLINA UTILITIES COMMISSION

Geneva S. Thigpen

Geneva S. Thigpen, Chief Clerk

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Commissioner Allyson K. Duncan presided during decisionmaking in this docket, but did not participate in the discussion of, or vote on, the issues addressed in this Order.

Commissioner Robert V. Owens, Jr., did not participate.